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ABSTRACT

This manual contains guidelines for individual organizations to follow in using a matrix model to determine and monitor their needs regarding nonformal skills training. Chapter 1 provides background to the development of the matrix model and the manual in the Republic of South Africa. It discusses the matrix, an instrument focusing on groups of skills and various aspects of training, and its uses. Chapter 2 contains definitions of concepts to ensure uniformity and comparability when industries or organizations complete the matrix. Definitions of "skill" and "nonformal skills training" are followed by descriptions of the six basic job categories identified for implementing the matrix. The concept of entrance requirements is addressed. The following broad categories of occupational skills are distinguished: handling, technological knowledge, thinking, and human. The final sections list criteria regarding which level of skills to apply to the categories of skills and questions to apply to each aspect of skills training. Chapter 3 provides instructions for completing the matrix, including who completes the matrix, situation and date, particulars on job category, scale points, and graphs. Chapter 4 addresses interpretation in three different situations: current, ideal, and a scenario for the future. An example is provided of the analysis of a matrix. Appendixes include a completed matrix and examples of graphs. An Afrikaans-language version is provided. (YLB)

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Matrix Model for determining the need for Skills Training

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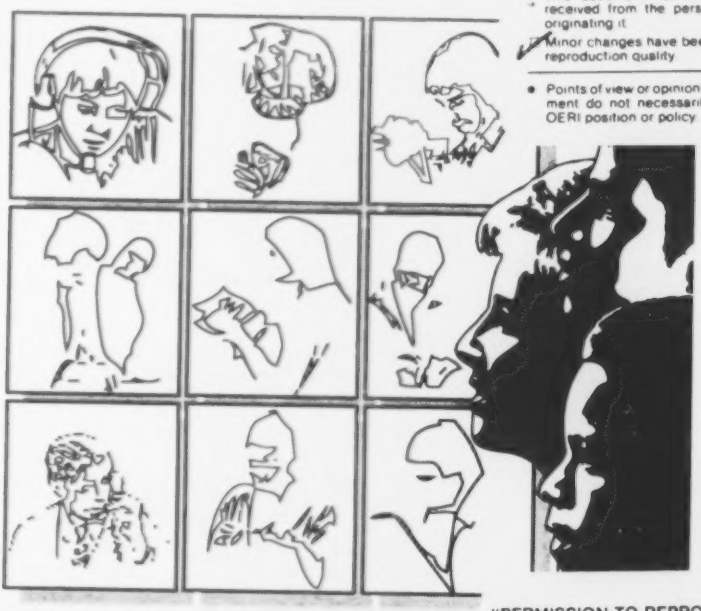

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NTB/HSRC INVESTIGATION
MATRIX MODEL FOR DETERMINING THE NEED FOR SKILLS TRAINING

Gerrie J. Cilliers, D. Phil.

Human Resources Strategies.
Manager: Dr J. Sunette van der Walt
Human Sciences Research Council
Published on the request of the National Training Board

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PREFACE

The serious shortage of skilled manpower in the RSA has increasingly focused attention on the need to expand and improve training facilities. Formal training institutions and employers have a joint responsibility with regard to skills training. Various investigations conducted over the past decades into the current state of and need for skills training on a macro level have indicated the necessity of continuous monitoring of the need for and provision of skills training. A matrix model used during one of the investigations to determine the state of skills training in industry proved to be a useful instrument for obtaining an overview of skills training in a specific organization/industry/region. The National Training Board requested the Human Sciences Research Council to adapt the matrix model and compile a manual according to which individual organizations could from time to time determine and monitor their own needs regarding skills training.

Thanks are due to the directors of training boards and to the personnel and training managers in industry for their co-operation in the testing of the matrix model and manual. It is hoped that the model will prove to be of particular use to those who have to make decisions on skills training and that it will enable them to identify problem areas and make adjustments that will be in the interest of both their particular organizations and the RSA in general.

The National Training Board wishes to extend special thanks to the HSRC, and to Dr Gerrie Cilliers of Human Resources Strategies in particular.

F. [illegible]

CHAIRMAN: NATIONAL TRAINING BOARD

February 1991

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1 BACKGROUND

Since the beginning of this century there has been an increasing awareness of the value of training, particularly in-service training. Research indicated that from 1929 to 1982 formal training before entering employment was responsible for only 26 % of the increase in the production capacity of the USA, while in-service training contributed more than half (55 %) of all improvements to the country's production capacity (Carnevale & Gainer, 1986). The competitive advantage of developed countries therefore depends on the application of technology together with a labour force that is better equipped and adaptable. In a developing country such as the RSA non-formal skills training is of vital importance and forms an integral part of the training process. Skills training refers to the non-formal training a person receives in the work situation to prepare him to do a job properly.

During the past few years a series of investigations on formal education, training of artisans and non-formal skills training in the work situation was conducted by the Human Sciences Research Council (HSRC) at the request of the National Training Board (NTB) during the past few years. The aim of the investigations was to develop guidelines for more purposeful and effective determining of the need for skills training. The investigation into skills training focused on identifying the factors that influence non-formal skills training, as well as on determining the existing structures for skills training and the position of skills training in various sectors. To obtain an overview of the position of skills training in industry, a matrix was designed to investigate some facets of skills training. In the HSRC/NTB investigation (1989) by using the matrix, certain deficiencies were identified, for example a lack of available trainers for skills training in a number of industries. With a view to the wider implementation of the matrix the NTB requested the HSRC to develop guidelines to enable individual organizations to assess their own needs regarding non-formal skills training by using the matrix from time to time.

The matrix is an instrument focussing on groups of skills and various aspects of training. The matrix can provide a broad framework for the determining of the needs for and provision of skills on a macro as well as a microlevel. By using appropriate scales, comparisons can be

made. The matrix is, however, not intended to be a rigid measuring instrument and can be adapted according to individual needs.

This matrix may be used for the following purposes:

- To determine the..us extent of the need for specific occupational skills, for example communication or thinking skills for specific job categories, e.g. those of supervisors or middle management.

- To identify crucial problems with regard to specific aspects of skills training, for example whether the provision of skills training for a specific job category is hampered by a lack of trainers, poorly structured training programmes or a lack of facilities, time or funds; whether there is a need for assessment instruments, and to which skills priority should be given.

- To determine future skills needs according to a future scenario based on expected technological development, specialization, diversification and other expected changes.

- To get an indication of the priorities for further in-depth investigations on specific identified areas.

2 MANUAL FOR THE USE OF A MATRIX FOR DETERMINING THE NEED FOR SKILLS TRAINING

2.1 INTRODUCTION

This manual provides for using the matrix to analyse the need for skills training in industries/firms/organizations. The matrix can be adapted to suit individual enterprises with specific objectives. When completing the matrix GENERAL TRENDS rather than individual cases or tasks should be kept in mind. One of the following three scenarios may be considered when completing the matrix (see Paragraph 4 for a discussion):

- The current situation
- The ideal situation (as it should be)
- A scenario of the future (for example as expected in five years' time)

The following definitions of concepts are recommended to ensure some degree of uniformity and comparability.

2.2 DEFINITIONS OF CONCEPTS

2.2.1 SKILL

The capability of a person to do a job or to function efficiently in a specific situation.

2.2.2 NON-FORMAL SKILLS TRAINING

Training which is not offered by formal educational institutions such as universities, technikons, technical colleges, provincial or government schools.

2.2.3 JOB CATEGORIES

Organizations determine job categories according to their own circumstances and needs. For example, the number and variety of categories depend on the size and the nature of the organization and may be grouped to suit the needs of the organization. The following six basic job categories were identified for implementing the matrix.

- **Top management** consists of senior executive and general managers who are responsible for strategic management in view of the corporate mission and vision of the organization and the resulting policy. These managers bear the final responsibility for the organization and for external liaison.

- **Middle management:** These managers are responsible for tactical management elements, for example co-ordinating resources, carrying out corporate policy and liaison between the executive and first-level management.

- **First-level managers** include managers who function on a level between middle management and supervisors, co-ordinate and control the work of supervisors.

- **Supervisors**: The supervisor is functionally involved in production or service-rendering and training of workers. (In larger organizations it may be necessary to distinguish between first-level managers and supervisors.)

- **Support staff** include workers who are not directly involved in the production or service-rendering process, but who facilitate production or the rendering of services by means of their support function. Support personnel can be divided further into different categories, for example cleaners, messengers and teamakers, administrative support staff (clerks, typists, secretaries, computer programmers, etc.) and technical support staff (systems analysts, technicians and artisans responsible for maintenance, etc.).

- **Operative staff** include workers who are directly involved in the production of goods or in the rendering of basic services, depending on the output of the organization. Here too are different categories, for example machine operators, crane drivers, computer operators, technicians and artisans who participate in the production process, officials on the line in providing services, etc.

2.2.4 REQUIREMENTS FOR ENTRANCE

There may be specific minimum entrance requirements for a job category. It is important to indicate the following minimum requirements for the job category for which the matrix is completed:

- Minimum level of education.

- Minimum number of years of practical experience.
- Other specific requirements.

2.2.5 SKILLS

The following broad categories of occupational skills are distinguished:

- **Handling skills:** Skills which are required for the physical handling or manipulating of machines and other equipment used in the production or service-rendering processes (handling tools, typewriters, telephones; driving a vehicle; manipulating large machines; construction and building work; welding; cable joining; repair and maintenance of equipment, etc.).

- **Technological knowledge skills:** Skills and insight to carry out the tasks particular to a person's work, for example analysing, interpreting and implementing techniques; tracing errors; applying knowledge, etc.

- **Thinking skills:** Skills required in the application of handling and technological knowledge, for example identifying and solving problems; developing procedures and methods; planning own and team work; innovating; evaluation, etc.

- **Human skills**

  - **Communication skills:** The preparation, interpretation, dispatching and communicating of information to ensure clear understanding, giving and receiving instructions, conveying of knowledge, language skills, all verbal and non-verbal communication, etc.

  - **Interpersonal skills:** Skills involving relationships with others, for example mentorship, negotiation, supervision, consultation, persuasion, motivation, team building - in other words the ability to accomplish effective relationships between people.

  - **Intrapersonal skills:** Skills of self-management, time management, assertiveness, self-realization, self-discipline, building self-image, flexibility, etc.

  - **Management skills:** The skills of planning, leadership, co-ordination, organization and control of other people's work with a view to achieving specific objectives.

2.2.6 LEVEL OF SKILLS

Different requirements apply to persons with regard to the skills level required on admission and after training:

With regard to **HANDLING SKILLS** the following criteria may be applied:

1 = should be able to work in a group with others
2 = should be able to work alone under supervision
3 = should be able to work independently according to instruction
4 = should be able to decide independently and be able to do the work
5 = should be able to identify and carry out out a task independently.

With regard to **TECHNOLOGICAL KNOWLEDGE SKILLS** the following criteria may be applied:

1 = basic knowledge and appropriate experience with regard to own functions
2 = basic knowledge and limited experience of implementing techniques applicable to own and related functions
3 = more than basic knowledge and relevant experience of implementing techniques applicable to own and related functions
4 = extended knowledge and experience of implementing techniques applicable to own and a variety of related functions
5 = expert knowledge and experience of implementing techniques with regard to own and all related functions.

With regard to **THINKING, HUMAN AND MANAGEMENT SKILLS** the following criteria may be applied:

1 = basic knowledge to cope with uncomplicated situations which may arise in the process of performing one's functions
2 = basic knowledge and experience to cope with any situation which may arise in the process of performing one's functions
3 = above average knowledge and experience to cope with more complicated situations which may arise in the process of performing one's functions

4 = a thorough knowledge and experience to cope with more complicated situations which may arise in the process of performing one's functions

5 = specialized knowledge and experience to cope with more complicated situations which may arise in the process of performing one's functions.

2.2.7 ASPECTS OF SKILLS TRAINING

Information on certain matters concerning skills training is of vital importance to the organization in order to decide whether the present state of affairs is satisfactory, whether any major problems occur or what changes could be expected. The following questions may apply to each of the aspects mentioned in the matrix:

- **The availability of human resources:** To what extent are human resources with the required minimum qualification available within the organization (internally)? To what extent can human resources with the required minimum qualifications and skills level (as specified for the specific job category) be acquired outside the organization (externally)?

- **The availability of appropriately qualified trainers:** To what extent does the organization already have suitable trainers or can trainers be recruited from outside the organization to provide the required training?

- **Training of trainers:** To what extent does the organization provide for the training of trainers?

- **Programme for skills training:** To what extent is training provided in the skills concerned according to a structured programme with a view to realizing set objectives?

- **Internal facilities:** To what extent are rooms and other facilities available internally and is training technology, such as videos, slides and other equipment used?

- **External facilities:** To what extent does the organization make use of external facilities for training, for example training boards, regional training centres, other external training centres and institutions that offer skills training?

- **Financial provision:** To what extent does the organization budget for training in terms of direct expenditure and/or time spent on training?

- **Organization's time:** To what extent is the organization's production time used for training its workers?

- **Assessment:** To what extent is training followed by determining the effectiveness in order to increase the output of the organization, so that, if necessary, adjustments can be made?

- **Feedback:** To what extent are the workers given feedback regarding their own development and achievement during the training process?

The matrix was designed so that each group of skills for each of the different job categories can be assessed on a scale of 1 to 6, for example

1 = none
2 = to some extent
3 = to some extent but still unsatisfactory
4 = to some extent satisfactory
5 = fairly good
6 = excellent.

By assessing each aspect in this way, an overall image of the strengths and shortcomings with regard to skills training in the organization can be obtained.

3 INSTRUCTIONS FOR COMPLETING THE MATRIX

3.1 WHO COMPLETES THE MATRIX?

The organization selects a person or persons for completing the matrix or matrices. However, it is recommended that one or more of the following procedures should be followed:

- Matrices for the various job categories may be completed individually by a person who has the necessary knowledge of the circumstances regarding the particular job category.
- Matrices for all the job categories may be completed by a person who has the knowledge of the entire skills training situation in the organization.
- A group of people of whom each has the knowledge of the skills training situation regarding one or more of the job categories applicable to the organization, may complete the matrices after discussion and consensus on each scale point has been reached.

3.2 SITUATION AND DATE

The point of departure regarding the situation for which the matrix is completed, should be indicated on each matrix (i.e. whether the matrix is completed according to the present situation, or whether an ideal situation has been considered, or whether a future scenario within a particular number of years has been the point of departure). The date of completion of the matrix should be indicated to facilitate possible future reference.

3.3 PARTICULARS ON JOB CATEGORY

The number and variety of job categories may differ from one organization to the next. Therefore the number of matrices which are to be completed, will vary accordingly. The job category as well as the minimum requirements (educational and other) for appointment in a particular job category should be indicated, in order to determine the required level of each skill at entry and after training, as well as the situation regarding the various aspects of non-formal skills training.

3.4 SCALE POINTS

Circle the appropriate number in each square. . Refer to the scale definitions in Paragraph 2.2.7 (also see the example of a completed matrix in Annexure A).

3.5 GRAPHS

To facilitate interpretation and comparison, the circled numbers can be presented graphically as shown in Figure 1 (Annexure B).

4 INTERPRETATION

4.1 SITUATIONS

By taking different situations as the point of departure when completing the matrices, various ways of comparison and interpretation can be used, for example:

4.1.1 The current situation: To identify the current problems and priorities for skills training or to apply the matrix periodically to the current situation, changes can be identified in the needs regarding the skills structure in the organization. Projections and timeous adjustments can be made accordingly.

Assessment of the current training situation in the organization can be done in different ways:

- A matrix can be completed separately for each job category in the organization with respect to different departments, branches or subsidiaries and average scores can be calculated for each skill and each specific aspect, or
- A matrix may be completed for each job category in the organization for the organization as a whole. Aspects regarding a specific skill with respect to different job categories may be compared to determine within which job category the most serious deficiencies occur, or
- The different skills with regard to a specific aspect of a job category can be compared to determine within which skills category major shortcomings occur, for example the provision of finances for skills training.

4.1.2 The ideal situation: By comparing the matrix which had been completed for a specific job category for the current situation with the matrix completed for the same job category for an ideal situation, shortcomings can be identified which need attention to achieve the optimal functioning of the organization.

4.1.3 A future scenario: By completing the matrices for a future scenario, it is possible to plan well in advance and to adjust the policy accordingly.

Either separate matrices, each based on a different situation for a particular job category, can be completed or, by using different colour pencils, one matrix can be completed to reflect one or more different situations regarding a particular job category.

4.2 EXAMPLE

The following is an example of the analysis of a matrix which had been completed for the current situation of skills training for technical support staff in a manufacturing industry (see Annexure A).

- **Entrance requirements:** The company requires people appointed in this category to have at least a National Diploma (technikon). They have to be prepared to travel extensively, but no work experience is required.

- **Level of skills:** As regards manipulative/handling skills, technical support staff at entrance level are required to be able to work in a group, but after they have received training they should be able to take the initiative in identifying and carrying out their tasks.

  As regards technological knowledge skills staff members in this category are required to have a basic knowledge and appropriate experience (acquired in experiential training during their years of study) of those functions that they have to perform. However, after training they should be able to make decisions and work independently.

  They should have the basic knowledge at entrance level to plan their own work (thinking skills). After training they should have expert knowledge and experience to do more complicated planning and possibly to make quick decisions on replanning.

  As regards communication and interpersonal skills the company does not have very high expectations of technical support staff at entrance level. However, after training they should be able to handle complicated situations, for example to solve interpersonal

problems and to submit an acceptable report on their own and their team's work.

As far as intrapersonal skills are concerned, at entrance level they are required to have an average ability to manage their own time and practise self-discipline. After training, they are expected to have mastered these skills at a better than average level.

At entrance level only a basic knowledge of management skills is required for this job category. After training, however, they should be able to handle any situation regarding planning, leadership, co-ordinating, organizing and controlling their own work and that of their team to achieve set objectives.

- **Aspects of training**

  - **Availability of human resources:** The score of 1 with respect to management skills shows that there is a lack of technical support staff with a basic knowledge and appropriate experience of basic management principles in the company, neither is there a possibility of acquiring these human resources externally. (If a similar situation occurs in a large number of organizations, it may be an indication that more attention should be given to teaching management skills at tertiary educational level.)

    In general the average and below average scores for all the different skills indicate difficulties in obtaining technical support staff with the necessary skills.

  - **Availability of qualified trainers:** Qualified trainers to train technical support staff in management skills are readily available. There is a satisfactory supply of trainers who could teach handling skills to technical support staff. However, fewer trainers who are qualified to train in technological knowledge skills and thinking skills are available.

  - **Provision for training of trainers:** The organization provides fairly well for the training of trainers in all the different skills, except the thinking skills. Therefore, as there is already an indication that trainers in thinking skills are not readily available (see previous remark at (2)), high priority should be given to the

training of these trainers. Attention should also be given to the training of trainers in handling skills.

- **Programmes for training:** Fairly well-structured programmes are available for the training of technical support staff in handling, communications, interpersonal and management skills. As far as technological knowledge, thinking and particularly intrapersonal skills are concerned however the situation is unsatisfactory. Therefore the organization should try to get experts to develop programmes for training trainers in the skills necessary for all job categories.

- **Internal facilities:** Although there is still room for improvement, internal facilities for the training of technical support staff in the various skills are well provided.

- **External facilities:** Except for handling and technological knowledge skills, the external facilities for training in all the other skills, are fairly well provided. Because external facilities for training in handling and technological knowledge skills are not available, the internal facilities of the organization should be optimally utilized. If necessary, more than one organization can group together to provide external facilities in order to prevent duplication of facilities.

- **Financial provision:** Funds for the training of skills are adequately provided, except for training in management skills (probably because the training of technical support staff in management skills is not deemed necessary). However, it is imperative that financial provision should also be made for the training of technical support staff in management skills, because they may be the future supervisors or managers.

- **Organization's time:** In the majority of cases technical support staff are trained in all the different skills during the production time of the company. For the training in intrapersonal skills, however, little time is devoted during working hours. This may indicate a deficiency, and the organization should investigate the possibility of devoting more production time to non-formal skills training.

- **Assessment:** Technical support staff are fairly well rated for handling and technological knowledge skills. However, certain deficiencies occur regarding the more abstract skills (probably on account of the difficulty to link these skills directly to a specific output). Guidelines should therefore be developed for evaluating the thinking skills, human skills and management skills of technical support staff.

- **Feedback:** In general the feedback to technical support staff on their progress and accomplishments in the more abstract skills is unsatisfactory. If the company wants the best performance from their staff, more attention should be given to feedback.

REFERENCES

CARNEVALE, A.P., GAINER, L.J. *The Learning Enterprise.* US Department of Labor Employment & Training Administration, 1986.

HSRC/NTB INVESTIGATION INTO SKILLS TRAINING IN THE RSA. *HSRC Educational Research Programme No 14, HSRC/NTB report.* Pretoria: Human Sciences Research Council, 1989.

MATRIX **ANNEXURE A**

1 **SITUATION :** Present....① Ideal. .....2 Future scenario for the year.....

2 **DATE COMPLETED**..1991/04/02

3 **JOB CATEGORY**....Technical support staff

4 **ENTRANCE REQUIREMENTS:** Minimum educational qualifications....National Diploma (Technikon)

Minimum number of years of work experience...None

Other specific requirements ....Prepared to travel extensively

	SKILLS						
	Handling skills	Technological knowledge skills	Thinking skills	Human skills			Management skills
				Communication skills	Interpersonal skills	Intrapersonal skills	
5 SKILLS LEVEL : at entrance	①2 3 4 5*	①2 3 4 5	①2 3 4 5	1②3 4 5	1②3 4 5	1 2③4 5	①2 3 4 5
after training	1 2 3 4⑤	1 2 3④5	1 2 3④5	1 2 3④5	1 2 3④5	1 2 3④5	1②3 4 5
6 ASPECTS OF SKILLS TRAINING							
(a) Availability of human resources: Internally	1 2①4 5 6*	1②3 4 5 6	1②3 4 5 6	1②3 4 5 6	1 2③4 5 6	1 2 3④5 6	①2 3 4 5 6
Externally	1 2⑤4 5 6	1②3 4 5 6	1②3 4 5 6	1②3 4 5 6	1 2③4 5 6	1 2 3④5 6	①2 3 4 5 6
(b) Availability of qualified trainers	1 2 3④5 6	1②3 4 5 6	1②3 4 5 6	1 2③4 5 6	1 2③4 5 6	1 2③4 5 6	1 2 3 4⑤6
(c) Provision of training to trainers	1 2 3 4⑤6	1 2 3 4⑤6	1 2③4 5 6	1 2 3④5 6	1 2 3④5 6	1 2 3④5 6	1 2 3 4⑤6
(d) Training program	1 2 3 4⑤6	1 2③4 5 6	1 2③4 5 6	1 2 3 4⑤6	1 2 3 4⑤6	1②3 4 5 6	1 2 3 4⑤6
(e) Internal facilities	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6
(f) External facilities	①2 3 4 5 6	1②3 4 5 6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6	1 2 3 4⑤6
(g) Financial provision	1 2 3 4 5①	1 2 3 4 5⑥	1 2 3 4 5⑥	1 2 3 4 5①	1 2 3 4 5①	1 2 3 4 5⑥	1 2③4 5 6
(h) Organization's time	1 2 3④5 6	1 2 3④5 6	1 2③4 5 6	1 2③4 5 6	1 2③4 5 6	1②3 4 5 6	1 2 3④5 6
(i) Assessment	1 2 3 4⑤6	1 2 3 4⑤6	1②3 4 5 6	1②3 4 5 6	1②3 4 5 6	1②3 4 5 6	1②3 4 5 6
(j) Feedback	1 2 3 4⑤6	1 2 3 4⑤6	1 2③4 5 6	1 2③4 5 6	1 2③4 5 6	1 2③4 5 6	①2 3 4 5 6

* See Paragraph 2 of **MANUAL** for scale definitions.

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FIGURE 1

TECHNICAL SUPPORT STAFF

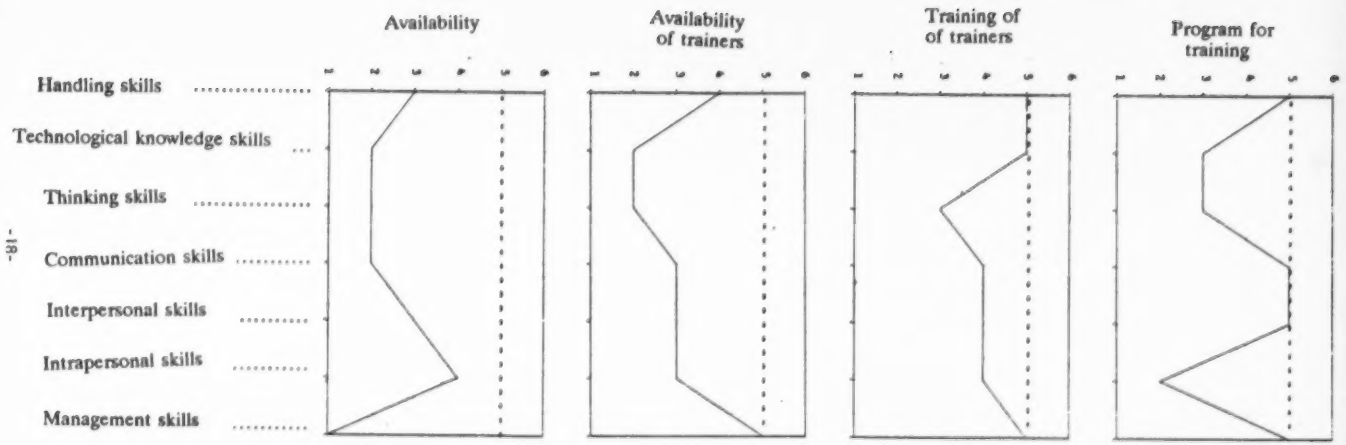


FIGURE 1

TECHNICAL SUPPORT STAFF

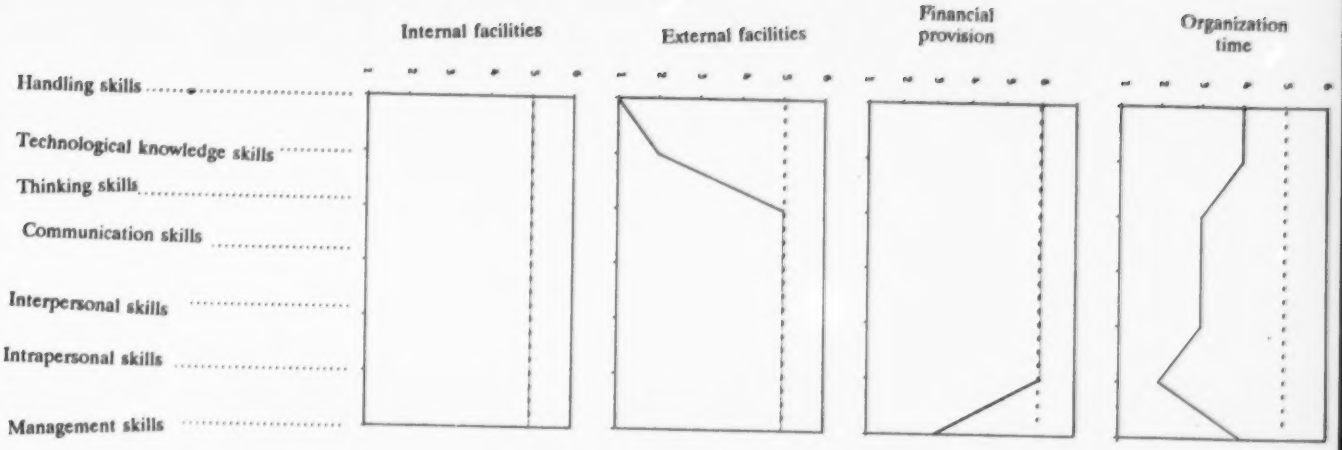
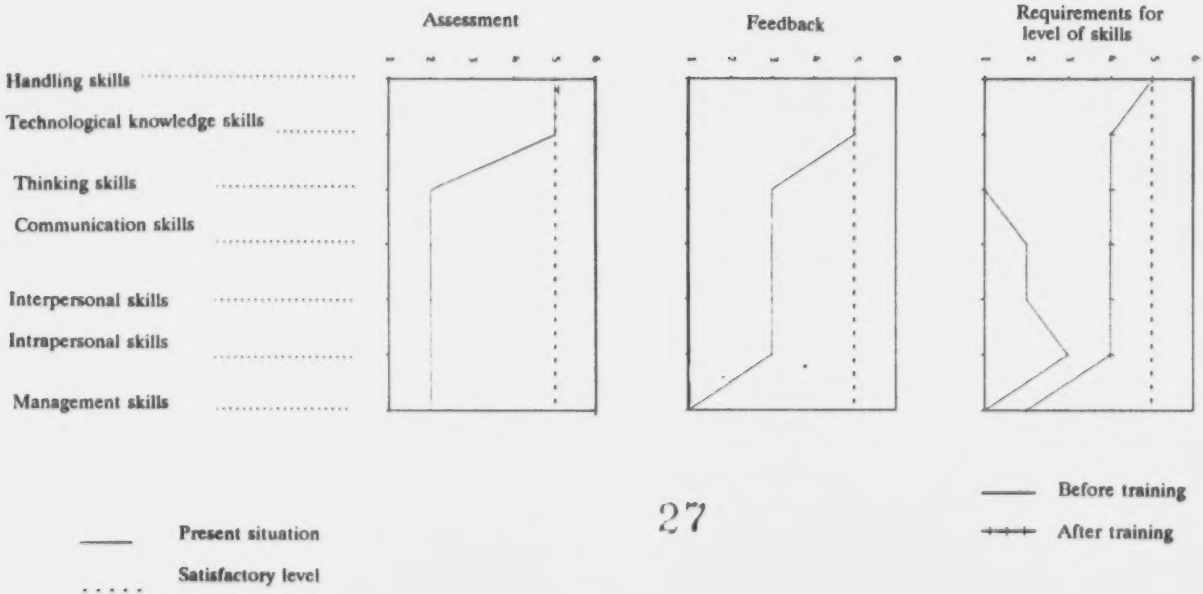


FIGURE 1

TECHNICAL SUPPORT STAFF



MATRIX

1 **SITUATION :** Present.....1 Ideal .....2 Future scenario for the year.....

2 **DATE COMPLETED**.....

3 **JOB CATEGORY**.....

4 **ENTRANCE REQUIREMENTS:** Minimum educational qualifications.....

Minimum number of years of work experience.....

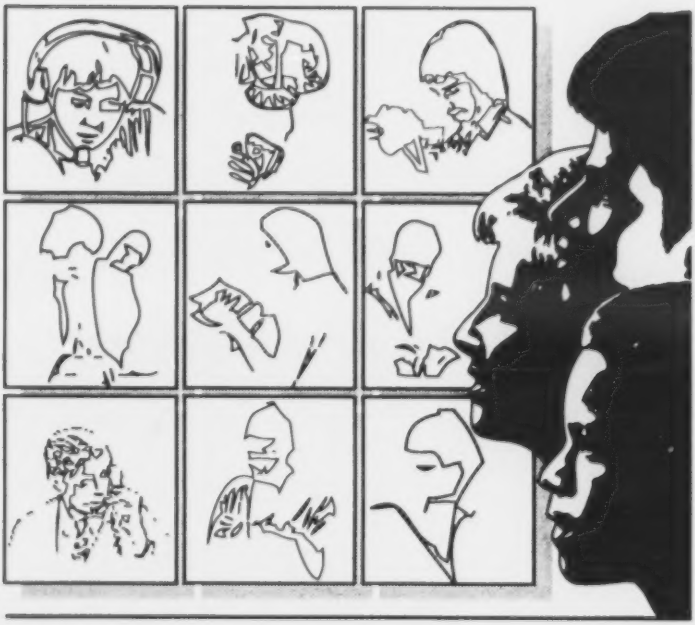
Other specific requirements .....

HSRC

	SKILLS						
	Handling skills	Technological knowledge skills	Thinking skills	Human skills			Management skills
				Communication skills	Interpersonal skills	Intrapersonal skills	
5 SKILLS LEVEL : **at entrance**	1 2 3 4 5*	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
after training	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
6 ASPECTS OF SKILLS TRAINING							
(a) Availability of human resources Internally	1 2 3 4 5 6*	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
Externally	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(b) Availability of qualified trainers	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(c) Provision of training to trainers	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(d) Training program	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(e) Internal facilities	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(f) External facilities	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(g) Financial provision	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(h) Organization's time	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(i) Assessment	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(j) Feedback	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

* See Paragraph 2 of **MANUAL** for scale definitions

Matriksmodel vir die bepaling van die behoefte aan Vaardigheidsopleiding



Gerrie J. Cilliers

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING

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NOR-/RGN-ONDERSOEK
MATRIKSMODEL VIR DIE BEPALING VAN DIE BEHOEFTE AAN VAARDIGHEIDSOPLEIDING

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Menslike Hulpbronstrategieë
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Raad vir Geesteswetenskaplike Navorsing
Gepubliseer op versoek van die Nasionale Opleidingsraad

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VOORWOORD

Die groot tekort aan geskoolde werkkragte in die RSA vestig die aandag al meer op die uitbreiding en verbetering van opleidingsfasiliteite. Formele opleidingsinstellings en werkgewers het 'n gesamentlike verantwoordelikheid ten opsigte van vaardigheidsopleiding. Verskeie ondersoeke na die stand van en behoefte aan vaardigheidsopleiding op makrovlak is gedurende die afgelope dekades gedoen. Uit hierdie ondersoeke is 'n behoefte aan deurlopende monitering van die behoefte aan en voorsiening van vaardigheidsopleiding geïdentifiseer. 'n Matriksmodel wat tydens een van die ondersoeke gebruik is om die stand van vaardigheidsopleiding in die nywerheid te bepaal, het 'n handige instrument geblyk om 'n oorsig van vaardigheidsopleiding in 'n bepaalde organisasie/bedryf/streek te verkry. Die Nasionale Opleidingsraad het die Raad vir Geesteswetenskaplike Navorsing versoek om die matriksmodel aan te pas en 'n handleiding te voorsien waarvolgens individuele organisasies hul eie behoefte aan vaardigheidsopleiding van tyd tot tyd kan bepaal en monitor.

Dank word betuig aan die direkteure van opleidingsrade en personeel- en opleidingsbestuurders in die nywerheid vir hulle samewerking met die uittoets van die matriksmodel en handleiding. Die vertroue word uitgespreek dat die matriksmodel van besondere nut sal wees vir besluitnemers oor vaardigheidsopleiding om knelpunte te identifiseer en aanpassings te maak wat in belang van sowel die organisasie as die RSA in die algemeen sal wees.

Die Nasionale Opleidingsraad betuig besondere dank aan die RGN en aan dr. Gerrie Cilliers, Menslike Hulpbronstrategieë in die besonder.

F.R.L.N. EKSTEEN
VOORSITTER: NASIONALE OPLEIDINGSRAAD

Februarie 1991

INHOUD **Bladsy**

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1 AGTERGROND

Daar is sedert die begin van die huidige eeu 'n toenemende bewuswording van die waarde van opleiding, veral indiensopleiding. Navorsing dui daarop dat tussen die jare 1929 en 1982 formele opleiding voor indienstreding verantwoordelik was vir slegs 26 % van die uitbreiding in die produksiekapasiteit van die VSA, terwyl indiensopleiding meer as die helfte (55 %) bygedra het tot alle verbeteringe in die land se produksiekapasiteit (Carnevale en Gainer, 1986). Die voorsprong wat ontwikkelde lande het, is dus afhanklik van die toepassing van tegnologie tesame met 'n arbeidsmag wat beter toegerus en aanpasbaar is. In 'n ontwikkelende land soos die RSA is vaardigheidsopleiding van kardinale belang en vorm 'n integrale deel van die opleidingsproses. Vaardigheidsopleiding verwys na die nieformele opleiding wat 'n persoon in die werksituasie ontvang om hom in staat te stel om sy werk behoorlik te doen.

'n Reeks ondersoeke oor formele onderwys, opleiding van ambagsmanne en nie-formele vaardigheidsopleiding in die werksituasie is gedurende die afgelope jare deur die RGN in opdrag van die Nasionale Opleidingsraad gedoen, met die oog op riglyne vir doelgerigter en effektiewer bepaling van vaardigheidsopleidingsbehoeftes. Die ondersoek oor vaardigheidsopleiding het ten doel gehad om die faktore wat nie-formele vaardigheidsopleiding beïnvloed, te identifiseer, asook om 'n opname te maak van die strukture wat tans vir vaardigheidsopleiding bestaan en te bepaal wat die stand van vaardigheidsopleiding in verskillende sektore is. Om 'n oorsigtelike beeld van die stand van vaardigheidsopleiding in nywerhede te kry, is 'n matriks ontwerp om 'n aantal fasette van vaardigheidsopleiding te ondersoek. In die NOR-/RGN-ondersoek (1989) is byvoorbeeld deur middel van die matriks bepaalde leemtes geïdentifiseer ten opsigte van vaardigheidsopleiding in 'n aantal nywerhede, soos 'n tekort aan geskikte opleiers. Met die oog op die wyer gebruik van die matriks het die Nasionale Opleidingsraad die RGN versoek om riglyne saam te stel ten einde individuele organisasies in staat te stel om die stand van hul eie behoeftes aan vaardigheidsopleiding deurlopend met behulp van die matriks te peil.

Die matriks is 'n instrument wat op groeperings van vaardighede en verskillende aspekte van opleiding fokus. Die matriks kan 'n breë raamwerk vir die beoordeling van die behoeftes aan en voorsiening van vaardigheidsopleiding op sowel mikro- as makrovlak verskaf. Deur gepaste

skale te gebruik, kan vergelykings ook getref word. Die matriks is egter nie 'n rigiede meetinstrument nie en kan volgens eie behoeftes aangepas word. Dit kan vir die volgende doeleindes gebruik word:

- Om die omvang van die behoefte aan bepaalde vaardighede, byvoorbeeld kommunikasievaardighede of dinkvaardighede in bepaalde poskategorieë, byvoorbeeld dié van toesighouers of middelbestuurders, te bepaal.

- Om knelpunte met betrekking tot sekere aspekte van vaardigheidsopleiding te identifiseer. Die voorsiening van vaardigheidsopleiding vir bepaalde poskategorieë word byvoorbeeld deur 'n gebrek aan opleiers, gestruktureerde opleidingsprogramme of fasiliteite, tyd of fondse gekortwiek; of daar is 'n behoefte aan evalueringsinstrumente; of daar moet vasgestel word aan watter vaardighede prioriteit verleen behoort te word.

- Om in die lig van verwagte tegnologiese ontwikkeling, uitbreiding, spesialisasie, diversifisering of ander beoogde veranderinge, toekomstige vaardigheidsbehoeftes na aanleiding van 'n toekomsscenario te bepaal.

- Om 'n aanduiding te gee van die prioriteite wat vir verdere diepte-ondersoeke oor spesifieke geïdentifiseerde terreine gestel moet word.

2 HANDLEIDING VIR DIE GEBRUIK VAN 'N MATRIKS VIR DIE BEPALING VAN DIE BEHOEFTE AAN VAARDIGHEIDSOPLEIDING

2.1 INLEIDING

In hierdie handleiding word aangedui hoe om die matriks te gebruik vir die ontleding van die behoefte aan vaardigheidsopleiding in nywerhede/firmas/organisasies. Die matriks kan ook aangepas word vir ele gebruik in ondernemings met spesifieke oogmerke. Wanneer die matriks ingevul word, moet in die ALGEMEEN gedink word en nie aan uitsonderlike gevalle of spesifieke take nie. Een van die volgende drie situasies kan geld as uitgangspunt by die invul van die matriks (sien bespreking by paragraaf 4):

- die werklike huidige situasie
- die ideale situasie (soos wat dit behoort te wees)
- 'n toekomsscenario (soos wat dit na verwagting byvoorbeeld oor vyf jaar behoort te wees).

Om eenvormigheid met die oog op vergelykbaarheid te verseker, word die volgende begripsverklarings gegee:

2.2 BEGRIPSOMSKRYWINGS

2.2.1 VAARDIGHEID:

Die vermoë van 'n persoon om sy werk effektief te doen of te funksioneer in 'n bepaalde situasie.

2.2.2 NIE-FORMELE VAARDIGHEIDSOPLEIDING

Opleiding wat nie deur formele instellings soos universiteite, technikons, tegniese kolleges, provinsiale of staatskole aangebied word nie.

2.2.3 POSKATEGORIEË

Organisasies bepaal poskategorieë volgens ele omstandighede en behoeftes. So byvoorbeeld hang die aantal en verskeidenheid kategorieë nou saam met die grootte en aard van die organisasie en dit kan volgens ele behoeftes gegroepeer word. Vir die toepassing van die matriks is die volgende ses basiese poskategorieë geïdentifiseer:

- **Topbestuur** bestaan uit uitvoerende en algemene bestuurders wat verantwoordelik is vir strategiese bestuur met die oog op die korporatiewe missie en visie van die organisasie en die beleid wat daaruit voortvloei. Hierdie bestuurders dra finale verantwoordelikheid vir die organisasie en vir eksterne skakeling.

- **Middelbestuur:** Hierdie bestuurders is verantwoordelik vir taktiese bestuurselemente soos koördinering van hulpbronne, uitvoering van korporatiewe beleid en skakeling tussen uitvoerende bestuur en eerstevlakbestuur.

- **Eerstevlakbestuur** sluit bestuurders in wat op 'n vlak tussen middelbestuur en toesighouers funksioneer. Hulle koördineer en kontroleer die werk van toesighouers.

- **Toesighouers:** Die toesighouer is funksioneel betrokke by produksie of dienslewering en lei werkers op. (In groter organisasies kan daar onderskei word tussen eerstevlakbestuurders en toesighouers.)

- **Ondersteunende personeel** sluit werkers in wat nie direk by die produksie- of dienslewerингsproses betrokke is nie, maar wat produksie of dienste moontlik maak deur die ondersteunende funksie wat hulle vervul. Ondersteunende personeel kan verder in verskillende kategorieë ingedeel word, byvoorbeeld skoonmakers, bodes en teemakers, administratief ondersteunende personeel (klerke, tiksters, sekretarisse, rekenaarprogrammeerders, ens.) en tegnies ondersteunende personeel (stelselontleders, tegnici en vakmanne wat vir instandhouding verantwoordelik is, ens.).

- **Bedryfspersoneel** is werkers wat direk betrokke is by die produksieproses van goedere of die verskaffing van basiese dienste, afhangende van die uitsette van die organisasie. Ook hier kan verskillende kategorieë ter sprake wees, byvoorbeeld masjienoperateurs, hyskraanbestuurders, rekenaaroperateurs, tegnici, vakmanne wat aan die produksieproses deelneem of lynfunksionarisse in 'n diensorganisasie.

2.2.4 TOETREDINGSVEREISTES

Vir bepaalde poskategorieë kan sekere minimum toetredingsvereistes gestel word. Wanneer die matriks ten opsigte van 'n bepaalde poskategorie ingevul word, is dit dus belangrik om die volgende minimum vereistes aan te dui:

- Minimum opvoedkundige kwalifikasies.
- Minimum aantal jare van toepaslike ervaring.
- Ander spesifieke vereistes.

2.2.5 VAARDIGHEDE

Die breë kategorieë van vaardighede wat onderskei word, is die volgende:

- **Hanteringsvaardighede:** Vaardighede wat nodig is vir die fisiese hantering van masjiene en ander toerusting wat in die produksieproses of proses van dienslewering gebruik word (hantering van gereedskap, tikmasjiene, telefone, voertuigbestuur, manipulering van groot masjiene, konstruksie- en bouwerk, sweiswerk, kabellaswerk, instandhouding en herstel van toerusting, ens.).

- **Tegnologiese kennisvaardighede:** Vaardighede en insig om die take wat spesifiek aan 'n persoon se werk verbonde is, uit te voer, byvoorbeeld ontleding, interpretering en implementering van tegnieke; foutopsporing; toepassing van kennis, ens.

- **Denkvaardighede:** Vaardighede wat in die toepassing van hanteringsvaardighede en tegnologiese kennis benodig word, byvoorbeeld probleemidentifisering; probleemoplossing; ontwikkeling van prosedures en metodologieë, beplanning van eie werk, ander se werk en spanwerk, innovering, evaluering, ens.

- **Mensvaardighede**

  - **Kommunikasievaardighede:** Die voorbereiding, interpretasie, versending en oordra van inligting om duidelike begrip by ander te verseker, gee en ontvang van instruksies, oordra van kennis, taalvaardigheid, alle verbale en nie-verbale kommunikasie, ens.

  - **Interpersoonlike vaardighede:** Vaardighede waarby verhoudings met ander persone betrokke is, byvoorbeeld mentorskap,

onderhandeling, toesighouding, konsultering, oorreding, motivering, spanbou, met ander woorde die vermoë om interaksie tussen persone te bewerkstellig.

- **Intrapersoonlike vaardighede:** Vaardighede van selfbestuur, tydbestuur, selfhandhawing, selfverwesenliking, selfdissipline, selfbeeldbou, aanpasbaarheid, ens.

- **Bestuursvaardighede:** Die vaardighede van beplanning, leiding, koördinering, organisasie en beheer van ander se werk om bepaalde doelwitte te bereik.

2.2.6 VAARDIGHEIDSVLAK

Verskillende vereistes word gestel aan persone ten opsigte van vaardigheidsvlakke wat by hul toetrede en ná opleiding vereis word.

Ten opsigte van **HANTERINGSVAARDIGHEDE** kan die volgende kriteria op die skaal geld:

1 = moet take in 'n groep saam met ander kan doen
2 = moet take alleen kan doen onder toesig
3 = moet selfstandig volgens instruksie kan werk
4 = moet selfstandig kan besluit en die taak kan uitvoer
5 = moet take op eie inisiatief kan identifiseer en uitvoer.

Ten opsigte van **TEGNOLOGIESE KENNISVAARDIGHEDE** geld die volgende kriteria op die skaal:

1 = basiese kennis en toepaslike ervaring ten opsigte van eie funksies wat verrig moet word
2 = basiese kennis en beperkte ervaring in die toepassing van tegnieke wat verband hou met eie en verwante funksies
3 = meer as basiese kennis en toepaslike ervaring in die toepassing van tegnieke wat verband hou met eie en verwante funksies
4 = uitgebreide kennis en ervaring in die toepassing van tegnieke ten opsigte van eie en 'n verskeidenheid verwante funksies
5 = omvattende kennis en ervaring in die toepassing van tegnieke ten opsigte van eie en alle verwante funksies.

Ten opsigte van **DINK-, MENS- EN BESTUURSVAARDIGHEDE** geld die volgende kriteria op die skaal:

1 = basiese kennis om ongekompliseerde situasies te hanteer wat in die proses van funksievervulling voorkom
2 = basiese kennis en ervaring om enige situasie te hanteer wat in die proses van funksievervulling voorkom
3 = meer as basiese kennis en ervaring om meer gekompliseerde situasies te hanteer wat in die proses van funksievervulling voorkom
4 = grondige kennis en ervaring om meer gekompliseerde situasie te hanteer wat in die proses van funksievervulling voorkom
5 = gespesialiseerde kennis en ervaring om meer gekompliseerde situasies te hanteer wat in die proses van funksievervulling voorkom.

2.2.7 ASPEKTE VAN VAARDIGHEIDSOPLEIDING

Inligting oor sekere aspekte van vaardigheidsopleiding is van kritieke belang vir die organisasie om te besluit of die huidige stand daarvan bevredigend is, watter knelpunte bestaan of watter veranderinge moontlik verwag kan word. Die volgende vrae is van toepassing op elk van die aspekte wat in die matriks genoem word:

- **Beskikbaarheid van menslike hulpbronne:** In watter mate is menslike hulpbronne met die vereiste minimum kwalifikasies binne die organisasie (intern) beskikbaar? In watter mate kan menslike hulpbronne met die vereiste minimum opvoedkundige kwalifikasies en vaardigheidsvlak (soos vir die bepaalde poskategorie bepaal) buite die organisasie (ekstern) gewerf word?

- **Beskikbaarheid van toepaslik gekwalifiseerde opleiers:** In watter mate het die organisasie self geskikte opleiers of kan opleiers van buite gewerf word om die nodige opleiding te gee?

- **Opleiding van opleiers:** In watter mate maak die organisasie voorsiening vir die opleiding van opleiers?

- **Program vir vaardigheidsopleiding:** In watter mate word opleiding in 'n bepaalde vaardigheid verskaf volgens 'n gestruktureerde program met die oog op die bereiking van vooropgestelde doelwitte?

- **Interne fasiliteite:** In watter mate is interne lokale en ander fasiliteite beskikbaar en word van opleidingstegnologie gebruik gemaak soos video's, skyfies en ander toerusting?

- **Eksterne fasiliteite:** In watter mate word van eksterne opleidingsfasiliteite gebruik gemaak, byvoorbeeld, opleidingsrade, streeksopleidingsentra, ander eksterne opleidingsentra en instellings wat vaardigheidsopleiding aanbied?

- **Finansiële voorsiening:** In watter mate word begroot vir opleiding in terme van direkte uitgawe en/of tyd wat aan opleiding bestee word?

- **Organisasietyd:** In watter mate word van die produksietyd van die organisasie afgestaan vir opleiding van werkers?

- **Evaluering:** In watter mate word opleiding opgevolg met 'n evaluering van die effektiwiteit daarvan in terme van verhoging van die uitsette van die organisasie en met die oog op die nodige aanpassings?

- **Terugvoering:** In watter mate word terugvoering aan die werkers gegee ten opsigte van hulle eie ontwikkeling tydens die proses van opleiding?

Die matriks is so ontwerp dat elke aspek vir elk van die verskillende vaardighede op 'n skaal van 1 tot 6 beoordeel kan word, byvoorbeeld

1 = geen
2 = in geringe mate
3 = in 'n mate maar nog onbevredigend
4 = in 'n mate bevredigend
5 = redelik goed
6 = onverbeterlik.

Deur elke aspek op hierdie wyse te beoordeel, word 'n oorkoepelende beeld van die sterk punte en tekortkominge ten opsigte van vaardigheidsopleiding in die organisasie verkry.

3 AANWYSINGS VIR DIE INVUL VAN DIE MATRIKS

3.1 WIE MOET DIE MATRIKS INVUL?

Die keuse van wie die matriks/e moet/kan voltooi, berus by die organisasie. Daar word egter aanbeveel dat op een of meer van die volgende wyses te werk gegaan word:

- Matrikse vir die afsonderlike poskategorieë kan deur afsonderlike persone in die organisasie ingevul word deur dié persoon wat die beste op die hoogte is van die omstandighede met betrekking tot 'n spesifieke poskategorie.

- Matrikse vir al die poskategorieë kan deur 'n kundige persoon ingevul word wat kennis dra van die opleidingsituasie van al die verskillende poskategorieë.

- 'n Groep kundige persone wat elkeen kennis dra van die opleidingsituasie van een of meer van die poskategorieë kan die matrikse saam invul deur bespreking en bereiking van konsensus oor die skaalpunt ten opsigte van elke aspek.

3.2 SITUASIE EN DATUM

Die situasie waarvoor die matriks ingevul word (d.w.s. die situasie soos dit tans is, 'n ideale situasie of 'n toekomssituasie wat oor 'n bepaalde aantal jare verwag word), moet op elke matriks aangedui word. Om latere verwysing te vergemaklik, moet die datum wanneer die matriks ingevul is, ook vermeld word.

3.3 BESONDERHEDE OOR POSKATEGORIE

Die aantal en verskeidenheid van poskategorieë kan wissel van organisasie tot organisasie. Die aantal matrikse wat ingevul word, sal dienooreenkomstig wissel. Die poskategorie en die minimum toetredingsvereistes (opvoedkundig en ander) vir die bepaalde poskategorie word aangedui, sodat die vaardigheidsvlak by toetrede en ná opleiding asook die verskillende aspekte ten opsigte van vaardigheidsopleiding beoordeel kan word aan die hand van die vereistes wat gestel word.

3.4 SKAALPUNTE

Omkring die toepaslike syfer in elke blokkie. Raadpleeg die skaaldefinisies soos verstrek in paragraaf 2.2.7 (Sien voorbeeld van ingevulde matriks in bylae A.)

3.5 GRAFIEKE

Om interpretering en vergelyking te vergemaklik, kan die skaalpunte wat gemerk is, grafies voorgestel word soos in figuur 1 (bylae B).

4 INTERPRETERING

4.1 SITUASIES

Deur verskillende situasies as uitgangspunt te gebruik wanneer matrikse vir bepaalde poskategorieë ingevul word, kan verskillende wyses van vergelyking en interpretering toegepas word, byvoorbeeld:

4.1.1 Die huidige situasie:
Om die huidige kneipunte te identifiseer en prioriteite vir vaardigheidsopleiding te bepaal of deur die matriks periodiek op die huidige situasie toe te pas, kan veranderinge in die behoeftes ten opsigte van die vaardigheidsamestelling in die organisasie geïdentifiseer word en projeksies en tydige aanpassings gemaak word.

Die beoordeling van die huidige opleidingsituasie van die organisasie kan op verskillende wyses gedoen word:

- 'n Matriks kan vir elke poskategorie wat in die organisasie bestaan, afsonderlik ingevul word ten opsigte van verskillende afdelings, takke of filiale en gemiddelde tellings kan vir elke vaardigheid en spesifieke aspek bereken word, of

- 'n matriks kan vir elke poskategorie in die organisasie as geheel ingevul word, en aspekte rakende 'n bepaalde vaardigheid kan vir die verskillende poskategorieë vergelyk word om te bepaal by watter poskategorie die grootste leemte is ten opsigte van dié vaardigheid, of

- die verskillende vaardighede kan ten opsigte van 'n bepaalde aspek van 'n poskategorie vergelyk word om te bepaal by watter vaardighede die grootste leemtes voorkom, byvoorbeeld die voorsiening van finansies vir vaardigheidsopleiding.

4.1.2 Die ideale situasie: Deur die matriks vir dieselfde poskategorie ten opsigte van die huidige situasie en dié ten opsigte van die ideale situasie te vergelyk, kan tekortkominge

geïdentifiseer word met betrekking tot die ideaal wat nodig is om die organisasie optimaal te laat funksioneer..

4.1.3 'n Toekomsscenario: Deur die matrikse vir 'n toekomsscenario in te vul, word dit moontlik om vooruit te beplan en die beleid dienooreenkomstig aan te pas.

Een matriks kan vir elke situasie vir elke poskategorie ingevul word, of verskillende situasies kan op een matriks vir elke poskategorie gereflekteer word deur die gebruik van verskillende kleure penne.

4.2 VOORBEELD

'n Voorbeeld van 'n matriks wat ten opsigte van die huidige situasie van vaardigheidsopleiding vir tegnies ondersteunende personeel in 'n nywerheidsorganisasie ingevul is, word hier geïnterpreteer (sien bylae A).

- **Toetredingsvereistes:** Die organisasie vereis dat persone wat in hierdie poskategorie aangestel word, minstens oor 'n Nasionale Diploma (technikon) moet beskik en bereid moet wees om baie rond te reis, maar geen werkervaring word vereis nie.

- **Vaardigheidsvlak:** Wat hanteringsvaardighede betref, word verwag dat tegnies ondersteunende personeel by toetrede take in 'n groep saam met ander kan uitvoer maar ná opleiding behoort hulle take op eie inisiatief te kan identifiseer en uitvoer.

  Wat tegnologiese kennisvaardighede betref, word verwag dat persone in hierdie poskategorie 'n basiese kennis en toepaslike ervaring (wat tydens studiejare deur middel van ervaringsonderrig verwerf is) behoort te hê van die funksies wat hulle moet verrig. Nadat hulle vaardigheidsopleiding in die organisasie ontvang het, behoort hulle selfstandig te kan besluit en take te kan uitvoer.

  'n Basiese kennis om byvoorbeeld hulle eie werk te beplan (dinkvaardighede) is 'n vereiste by toetrede, terwyl hulle

ná opleiding 'n grondige kennis en ervaring behoort te hê om meer gekompliseerde beplanning te doen en moontlik vinnige besluite oor herbeplanning te kan neem.

Daar word nie baie hoë verwagtings aan hulle gestel ten opsigte van interpersoonlike en kommunikasievaardighede by toetrede nie, maar ná opleiding behoort hulle in staat te wees om gekompliseerde situasies te hanteer. Hulle behoort interpersoonlike probleme te kan hanteer en 'n aanvaarbare verslag oor hulle eie werk en dié van hulle span te kan voorlê.

'n Gemiddelde vermoë om hulleself en hulle eie tyd te bestuur en selfdissipline aan die dag te lê, m.a.w. intrapersoonlike vaardighede, is 'n vereiste by toetrede, terwyl die organisasie verwag dat hulle ná opleiding beter as gemiddeld daartoe in staat sal wees.

Slegs 'n basiese kennis van bestuursvaardighede is vir hierdie poskategorie by toetrede nodig, maar hulle behoort ná opleiding enige situasie met betrekking tot beplanning, leiding, koördinering, organisasie en beheer van hulle eie en hulle span se werk te kan hanteer om bepaalde doelwitte te bereik.

- **Aspekte van opleiding**

  - **Beskikbaarheid van menslike hulpbronne:** Die telling van 1 met betrekking tot bestuursvaardighede, dui daarop dat die organisasie intern geen tegnies ondersteunende personeel met 'n basiese kennis en toepaslike ervaring van basiese bestuursbeginsels beskikbaar het of ekstern kan kry nie. (Indien dieselfde tendens by 'n groot aantal organisasies waargeneem word, is dit moontlik 'n aanduiding dat daar op tersiêre onderwysvlak meer aandag hieraan gegee behoort te word.)

    In die algemeen dui die gemiddelde en ondergemiddelde telling vir al die vaardighede daarop dat tegnies ondersteunende personeel met die nodige vaardighede skaars is.

  - **Beskikbaarheid van gekwalifiseerde opleiers:** Vir opleiding in bestuursvaardighede is opleiers redelik beskikbaar. Die

beskikbaarheid van opleiers wat aan tegnies ondersteunende personeel hanteringsvaardighede kan leer, is in 'n mate bevredigend. Opleiers wat gekwalifiseerd is om opleiding te gee in tegnologiese kennis- en dinkvaardighede, is egter slegs in geringe mate beskikbaar.

- **Voorsiening van opleiding aan opleiers:** Die organisasie maak redelik goeie voorsiening vir die opleiding van opleiers in al die vaardighede, behalwe in dinkvaardighede. Daar sal dus hoë prioriteit gegee moet word aan die opleiding van opleiers in tegnologiese kennis- en dinkvaardighede, aangesien daar 'n aanduiding is dat opleiers in dinkvaardighede reeds slegs in geringe mate beskikbaar is (sien opmerking by (2) hierbo). Die volgende op die prioriteitslys is die opleiding van opleiers in hanteringsvaardighede.

- **Programme vir opleiding:** Daar is redelik goeie programme vir opleiding van tegnies ondersteunende personeel in interpersoonlike, hanterings-, kommunikasie- en bestuursvaardighede, maar ten opsigte van tegnologiese kennis-, dink- en veral intrapersoonlike vaardighede is daar tekortkominge. Aangesien daar 'n aanduiding is dat programme vir opleiding in intrapersoonlike vaardighede redelik onbevredigend is, sal die organisasie 'n poging moet aanwend om sodanige programme deur kundige persone te laat saamstel.

- **Interne fasiliteite:** Hoewel nie onverbeterlik nie, is die voorsiening van interne fasiliteite vir vaardigheidsopleiding aan tegnies ondersteunende personeel redelik goed.

- **Eksterne fasiliteite:** Eksterne fasiliteite is ook redelik goed voorsien vir opleiding in al die vaardighede behalwe hanteringsvaardighede en tegnologiese kennisvaardighede. Aangesien eksterne fasiliteite vir opleiding in hanterings- en tegnologiese kennisvaardighede nie beskikbaar is nie, behoort die interne fasiliteite optimaal gebruik te word. Indien nodig, kan meer as een organisasie moontlik ook saamspan om eksterne fasiliteite vir 'n groep organisasies beskikbaar te stel om duplisering van fasiliteite te voorkom.

- **Finansiële voorsiening:** Daar word finansieel voldoende voorsien vir opleiding in al die vaardighede, behalwe bestuursvaardighede (waarskynlik omdat die organisasie meen dat dit nie nodig is om tegnies ondersteunende personeel in bestuursvaardighede op te lei nie). Dit is egter noodsaaklik dat daar ook aandag gegee word aan die opleiding van tegnies ondersteunende personeel in bestuursvaardighede aangesien hulle moontlik die toesighouers en bestuurders van die toekoms is.

- **Organisasietyd:** Organisasietyd word in die meeste gevalle in 'n mate afgestaan vir opleiding in verskillende vaardighede, hoewel slegs in geringe mate vir intrapersoonlike vaardighede. Dit dui op 'n moontlike leemte en die organisasie sal die moontlikheid van meer tyd wat aan nie-formele vaardigheidsopleiding afgestaan word, moet ondersoek.

- **Evaluering:** Evaluering van tegnies ondersteunende personeel ten opsigte van hanteringsvaardighede en tegnologiese kennisvaardighede is redelik goed, maar daar is leemtes rakende die meer abstrakte vaardighede (waarskynlik omdat dit moeiliker is om hierdie vaardighede aan 'n bepaalde uitset te koppel). Riglyne sal dus ontwikkel moet word om tegnies ondersteunende personeel se dink-, mens- en bestuursvaardighede te evalueer.

- **Terugvoering:** Die terugvoering aan tegnies ondersteunende personeel oor hulle bekwaamheid en vordering in die meer abstrakte vaardighede, is in die algemeen onbevredigend, 'n aanduiding dat meer aandag hieraan gegee sal moet word om optimale funksionering te verkry.

VERWYSINGS

CARNEVALE, A.P. & GAINER, L.J. *The Learning Enterprise*. US Department of Labor Employment & Training Administration, 1986.

RGN-/NOR-ONDERSOEK NA VAARDIGHEIDSOPLEIDING IN DIE RSA, RGN Onderwys-navorsingsprogram nr. 14, RGN-/NOR-verslag, Pretoria: Raad vir Geesteswetenskaplike Navorsing, 1989.

MATRIKS **BYLAE A**

1 **SITUASIE :** Huidige....(1) Ideale .....2 Toekomsscenario vir die jaar.....

2 **DATUM INGEVUL** 1991/01/02

3 **POSKATEGORIE** Tegniese ondersteunende personeel

4 **TOETREDINGSVEREISTES :** Minimum opvoedkundige kwalifikasies Nasionale Diploma (Technikon)

Minimum jare werkervaring Geen

Ander spesifieke vereistes Moet bereid wees om baie te reis

	VAARDIGHEDE						
	Hanteringsvaardighede	Tegnologiese kennisvaardighede	Denkvaardighede	Mensvaardighede			Bestuursvaardighede
				Kommunikasievaardighede	Interpersoonlike vaardighede	Intrapersoonlike vaardighede	
5 VAARDIGHEIDSVLAK : by toetrede	(1) 2 3 4 5*	(1) 2 3 4 5	(1) 2 3 4 5	1 (2) 3 4 5	1 (2) 3 4 5	1 2 (3) 4 5	(1) 2 3 4 5
na opleiding	1 2 3 4 (5)	1 2 3 (4) 5	1 2 3 (4) 5	1 2 3 (4) 5	1 2 3 (4) 5	1 2 3 (4) 5	1 (2) 3 4 5
6 ASPEKTE VAN VAARDIGHEIDSOPLEIDING							
(a) Beskikbaarheid van menslike hulpbronne: Intern	1 2 (3) 4 5 6*	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 2 (3) 4 5 6	1 2 3 (4) 5 6	(1) 2 3 4 5 6
Ekstern	1 2 (3) 4 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 2 (3) 4 5 6	1 2 3 (4) 5 6	(1) 2 3 4 5 6
(b) Beskikbaarheid van gekwalifiseerde opleiers	1 2 3 (4) 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 2 3 4 (5) 6
(c) Voorsiening van opleiding aan opleiers	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 (3) 4 5 6	1 2 3 (4) 5 6	1 2 3 (4) 5 6	1 2 3 (4) 5 6	1 2 3 4 (5) 6
(d) Program vir opleiding	1 2 3 4 (5) 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 (2) 3 4 5 6	1 2 3 4 (5) 6
(e) Interne fasiliteite	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6
(f) Eksterne fasiliteite	(1) 2 3 4 5 6	1 (2) 3 4 5 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 3 4 (5) 6
(g) Finansiële voorsiening	1 2 3 4 5 (6)	1 2 3 4 5 (6)	1 2 3 4 5 (6)	1 2 3 4 5 (6)	1 2 3 4 5 (6)	1 2 3 4 5 (6)	1 2 (3) 4 5 6
(h) Organisasieryd	1 2 3 (4) 5 6	1 2 3 (4) 5 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 (2) 3 4 5 6	1 2 3 (4) 5 6
(i) Evaluering	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6	1 (2) 3 4 5 6
(j) Terugvoering	1 2 3 4 (5) 6	1 2 3 4 (5) 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	1 2 (3) 4 5 6	(1) 2 3 4 5 6

* Sien paragraaf 2 van **HANDLEIDING** vir skaaldefinisies.

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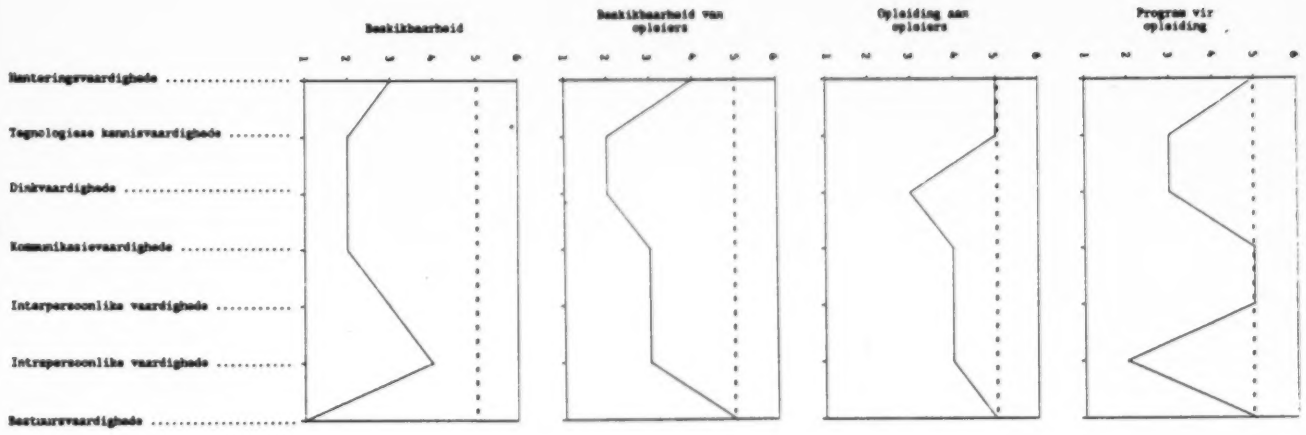
FIGUUR 1

TEGNIES-ONDERSTEUNENDE PERSONEEL

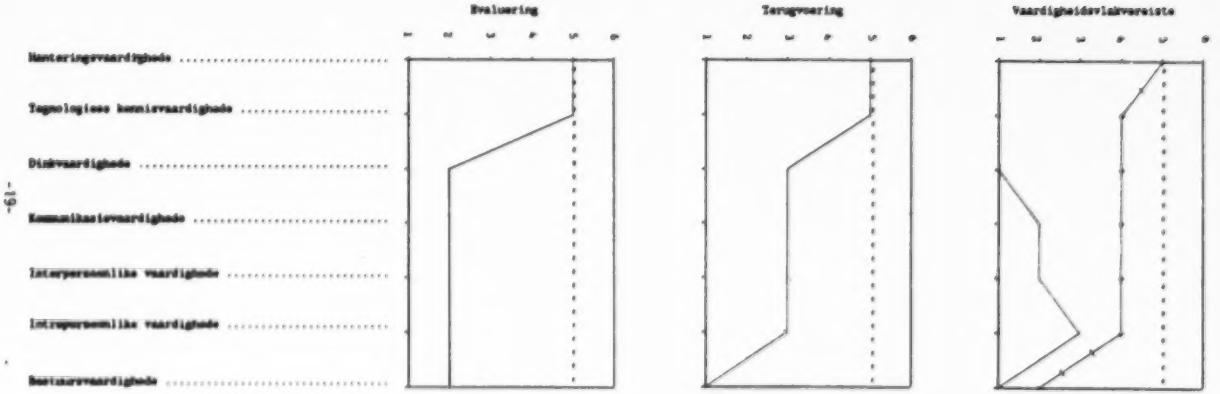


——— Huidige stand

. . . . Bevredigende vlak

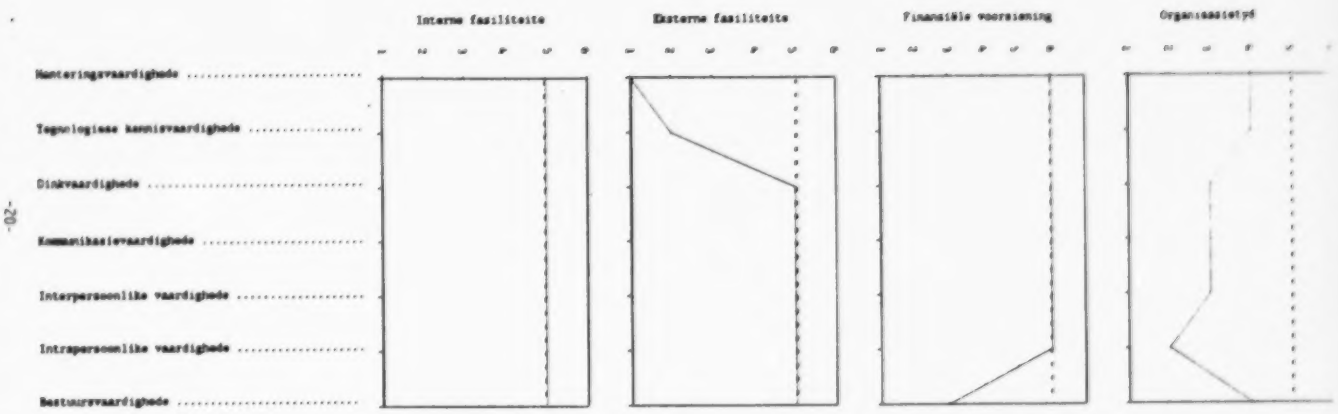
FIGUUR 1

TEGNIES-ONDERSTEUNENDE PERSONEEL



FIGUUR 1

TEGNIES-ONDERSTEUNENDE PERSONEEL



_____ Huidige stand

. . . . . Bevredigende vlak

MATRIKS

RGN

1 **SITUASIE :** Huidige ... 1 Ideale ... 2 Toekomsscenario vir die jaar.....

2 **DATUM INGEVUL** .....

3 **POSKATEGORIE** .....

4 **TOETREDINGSVEREISTES :** Minimum opvoedkundige kwalifikasies.....

Minimum jare werkervaring.....

Ander spesifieke vereistes .....

	VAARDIGHEDE						
	Hanterings-vaardighede	Tegnologiese kennisvaardighede	Denkvaardighede	Mensvaardighede			Bestuurs-vaardighede
				Kommunikasie-vaardighede	Interpersoonlike vaardighede	Intrapersoonlike vaardighede	
5 VAARDIGHEIDSVLAK : by toetrede	1 2 3 4 5*	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
na opleiding	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
6 ASPEKTE VAN VAARDIGHEIDSOPLEIDING							
(a) Beskikbaarheid van menslike hulpbronne Intern	1 2 3 4 5 6*	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
Ekstern	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(b) Beskikbaarheid van gekwalifiseerde opleiers	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(c) Voorsiening van opleiding aan opleiers	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(d) Program vir opleiding	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(e) Interne fasiliteite	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(f) Eksterne fasiliteite	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(g) Finansiele voorsiening	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(h) Organisasieryd	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(i) Evaluering	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
(j) Terugvoering	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

* Sien paragraaf 2 van **HANDLEIDING** vir skaaldefinisies.